FISH BIOLOGY TEAM
NOAA BEAUFORT LABORATORY

The Fish Biology Team conducts research that will enable the development of management options and strategies for sustainable coastal fisheries resources along the southeastern United States. The team accomplishes these goal by conducting the Headboat Survey, laboratory studies on aspects of life history of various fish species, field studies including offshore diving and collection of fishes, fishery data analysis, and computer diagnostics for detecting and quantifying species distributions and abundances.

HEADBOAT[1] SURVEY:

The Headboat Survey began in 1972 in North Carolina and South Carolina. It has since been expanded to cover the entire southeastern U.S. coast including the Gulf of Mexico. Port agents stationed along the southeastern U.S. and Gulf of Mexico meet headboats as they return from fishing, and collect lengths, weights, and biological samples from fishes that were caught. In addition, agents collect daily catch records from the vessels' captains/crews that identify, by individual fishing trips, the number of anglers, and estimated numbers and weights of each species caught. These biological and catch data are used to report on total catch and effort for the two fleets, and provide samples used in life history studies and stock assessments.

Port agents sample the fish by taking lengths, weights, and biological samples.

Headboats return to the dock displaying the catch for the day.

LIFE HISTORY STUDIES:

Most of the laboratory research involves studies on the age and growth of fish species. Since the mid-1970's, 29 species have been aged and results published in peer reviewed journals. Numerous studies on reproduction and food habits of fish have been conducted. Personnel also work closely with university graduate students on life history studies.

Personnel section fish otoliths (earstones) and view them under a microscope for annular aging.

[1/]Boats that carry more than 6 anglers and charge by the individual, thus per "head".

OFFSHORE FIELD STUDIES:

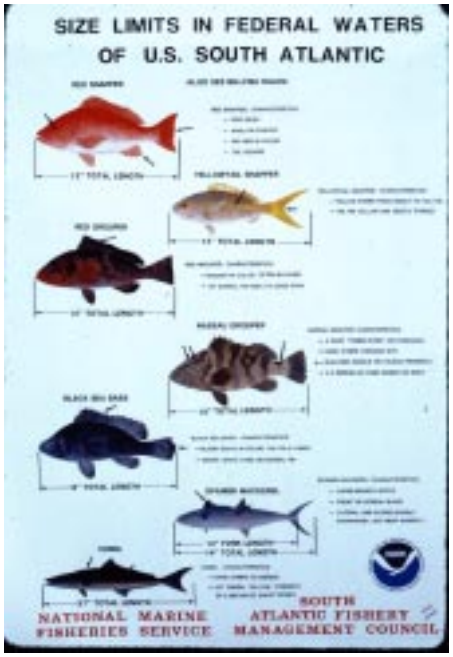
Field studies off Beaufort are conducted to document changes in species composition and abundance at selected reef fish habitats, and document changes as impacted by fishing and by environmental conditions. SCUBA, remote operated vehicles, and submarines are used for state of the art visual enumeration techniques.

During the past several years, field studies such as these have provided information on the removal of predators, and on population structure following 15 years of intense fishing pressure. Future research efforts will also be directed at recruitment of juvenile fish to specific habitats.

Personnel work underwater to conduct fish censuses on various habitats.

DATA ANALYSIS FOR FISHERY MANAGEMENT COUNCILS:

Landings data from commercial, recreational, and headboat fisheries, as well as biological samples analyses, are used to prepare stock assessments. Personnel also prepare reports on trends in fishing and compliance rates to various fishery regulations as imposed by the fishery management councils.



Example of a size limit poster that is used to inform the fishing public.

COMPUTER DIAGNOSTICS OF FISH DISTRIBUTIONS:

Personnel will be using more than 25 years of headboat catch and effort data with GIS technology to map species abundance, catch rates, and fishing effort for major reef fish species. This will allow the South Atlantic Fishery Management Council (SAFMC), as well as other fisheries managers, to identify essential fish habitat for reef fish resources. This is a new initiative which is planned over the next five years.

Biologists also plan to identify and quantify important reef fish spawning aggregations off South Florida (Riley's Hump) and Dry Tortugas. Valuable information is collected on species diversity and community structure in these areas. Studies will provide the SAFMC and Gulf of Mexico Fishery Management Council with data on aggregating species when marine sanctuary or fishing reserve management options are considered for some areas.

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